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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Herbert Egli

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EXAMINER

WEISS, PAMELA HL

ART UNIT

PAPER NUMBER

4153

MAIL DATE

DELIVERY MODE

10/03/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/526,953	Applicant(s) EGLI ET AL.	
	Examiner PAMELA WEISS	Art Unit 4153	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____. |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>03/08/2005</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Specification

1. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

Claim Objections

2. Claims 9-11, 13, 14 and 18-19 are objected to under 37 CFR 1.75(c) as being of improper dependent form for failing to further limit the subject matter of a previous claim. See MPEP § 608.01(n). Said claims include an embodiment "if not present" which fails to further limit the previous claim from which they depend. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Appropriate correction is required.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claim 5 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 5 is indefinite, because it recites the phrase "a concentrate consisting of" and it also recites "optionally also containing at least one of a sequestering agent or foam booster".

The transitional phrase "consisting of" excludes any element, step, or ingredient not specified in the claim. In re Gray, 53 F.2d 520, 11 USPQ 255 (CCPA 1931); Ex parte Davis, 80 USPQ 448, 450 (Bd. App. 1948) ("consisting of" defined as "closing

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the claim to the inclusion of materials other than those recited except for impurities ordinarily associated therewith.”). See MPEP 2111.02 See also MPEP § 2173.05(d).

The use of the phrase "consisting of" requires that the claim be defined and may not include any element not expressly included. The use of the “optional” phrase renders the claim indefinite because it is inconsistent with the “consisting of” language by attempting to leave “open” the inclusion of certain materials. It is unclear whether the limitations following the phrase are part of the claimed invention, therefore, the claims are indefinite.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1-4, 7-11, and 15-20 are rejected under 35 U.S.C. 102(b) as being anticipated by Ellenberger (WO 99/18330).

Regarding Claim 1: Ellenberger teaches a method of reducing wear in a cutting head of a tunnel boring machine (P1 L29-33), by adding at the cutting head of a foamed aqueous liquid composition (P2 L6-13 and L26), which comprises a foaming agent (Sulphate containing anionic surfactant, P2 L12) and a lubricant (Polyethylene oxide P2 L9-10), the lubricant being selected from the group consisting of high molecular weight polyethylene oxides (P2 L9-10).

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Regarding Claim 2: Ellenberger teaches the limitations set forth above. Ellenberger also teaches the method in which the individual ingredients of the foaming composition are dispensed in individual aqueous form (P3 L7-14 and L20) into water and are converted to foam (P3 L20-22).

Regarding Claim 4: Ellenberger teaches the limitations set forth above. Ellenberger also teaches the method in which the composition is supplied as a concentrate, which is diluted with water in situ (P3 L20-21), to provide the foaming composition.

Regarding Claims 3 and 7- 8: Ellenberger teaches the limitations set forth above. Ellenberger also teaches the method in wherein the foaming agent is at least one of selected from anionic or nonionic surfactants. (P2 L12, anionic surfactant)

Regarding Claim 15: Ellenberger teaches a wear-reducing foamable liquid concentrate (Example 1) comprising at least one lubricant selected from high molecular weight polyethylene oxide and at least one foaming agent which provides short-lived foams, optionally also comprising at least one of a sequestering agent or foam booster (P2 L6-13 and L26-31), wherein the amounts are as follows:

(a) in the case of polyethylene oxide as lubricant:

0.4-2% polyethylene oxide; (1.2%, P4 L8)

2-40% foaming agent; (8.58% P4 L6)

up to 5 % sequestering agent; (0%)

and up to 10% foam booster; (5% P4 L7)

by weight of liquid composition, the remainder being water (85.18% P4 L11).

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Regarding Claim 16: Ellenberger teaches the limitations set forth above. Ellenberger also teaches the a wear-reducing foamed liquid comprising of the wear-reducing foamable liquid concentrate diluted in about 1 to about 20 volumes of water (P5 L4 see 3% solution) and foamed to provide a volume expansion of from about 5 to about 40 times the volume of the unfoamed material. (P5 L5, see foamed 1:10 with air)

Regarding Claim 17: Ellenberger teaches the limitations set forth above. Ellenberger also teaches the method in wherein the foaming agent is at least one of selected from anionic or nonionic surfactants. (P2 L12, anionic surfactant)

Regarding Claims 9-11, and 18: Ellenberger teaches the limitations set forth above. Ellenberger teaches the use of anionic surfactants. Since Ellenberger does not use nonionic surfactants, none are present.

Regarding Claim 19: Ellenberger teaches the limitations set forth above. Ellenberger also teaches the wear-reducing foamable liquid concentrate wherein if present the polyethylene oxide has a weight average molecular weight of at least 1,000,000. (P2 L9-10).

Regarding Claim 20: Ellenberger teaches the limitations set forth above. Ellenberger does not explicitly teach the method where said concentrate is added in an amount of about 0.5 to about 10 kg/m³ of rock removed. The economic efficiency of drilling is a function of the durability of the drill head and the amount of rock removed. The durability of the drill head is a

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variable that can be modified by adjusting the friction between the drill and the rock through which it passes. This friction is a variable that can be modified by adjusting the amount of foaming concentrate injected at the site of drilling; therefore, the precise amount of foaming concentrate would have been considered a result effective variable by one having ordinary skill in the art at the time the invention was made. As such, without showing unexpected results, the claimed amount of concentrate cannot be considered critical. Accordingly, one of ordinary skill in the art at the time the invention was made would have optimized, by routine experimentation the amount of concentrate to obtain the desired friction and thereby lengthen the life of the drill head. (In re Boesch, 617 F.2d. 272, 205 USPQ 215 (CCPA 1980)), since it has been held that where the general conditions of the claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. (In re Aller, 105 USPQ 223).

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.

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4. Considering objective evidence present in the application indicating obviousness or nonobviousness.
9. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).
10. Claims 5, 6, and 12-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ellenberger (WO 99/18330) .

Regarding Claim 5: Ellenberger teaches a wear-reducing foamable liquid concentrate (Example 1), consisting of at least one lubricant selected from high molecular weight polyethylene oxide and at least one foaming agent which provides short-lived foams, optionally also containing at least one of a sequestering agent or foam booster (P2 L6-13 and L26-31), wherein the amounts are as follows:

(a) in the case of polyethylene oxide as lubricant:

0.1-3 % polyethylene oxide; (1.2% P4 L8)

2-40% foaming agent; (8.58 % P4 L6)

up to 5% sequestering agent (0%) ;

and up to 10% foam booster; (P4 L7, 5%)

by weight of liquid composition, the remainder being water. (P4 L11, 85.18%)

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While Ellenberger discloses the use of biocide and a complexing agent, Ellenberger also discloses that these components are optional (P2 L26-27).

It would have been obvious to one having ordinary skill in the art at the time of the invention to omit optional components such as the complexing agent and the biocide in the composition of Ellenberger, since doing so would lower the environmental impact and cost of the composition and would amount to nothing more than to use of a known composition in a known environment to accomplish an entirely expected result.

Regarding Claim 6: Modified Ellenberger teaches the limitations set forth above.

Modified Ellenberger also teaches the a wear-reducing foamed liquid wherein the wear-reducing foamable liquid concentrate diluted in about 1 to about 20 volumes of water (P5 L4 see 3% solution) and foamed to provide a volume expansion of from about 5 to about 40 times the volume of the unfoamed material. (P5 L5, see foamed 1:10 with air)

Regarding Claim 12: Modified Ellenberger teaches the limitations set forth above.

Modified Ellenberger also teaches the method in wherein the foaming agent is at least one of selected from anionic or nonionic surfactants. (P2 L12, anionic surfactant)

Regarding Claim 13: Modified Ellenberger teaches the limitations set forth above.

Modified Ellenberger teaches the use of anionic surfactants. Since modified Ellenberger does not use nonionic surfactants, none are present.

Regarding Claim 14: Modified Ellenberger teaches the limitations set forth above.

Modified Ellenberger also teaches the wear-reducing foamable liquid concentrate wherein if present the polyethylene oxide has a weight average molecular weight of at least 1,000,000. (P2 L9-10).

Conclusion

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to PAMELA WEISS whose telephone number is (571)270-7057. The examiner can normally be reached on Mon.-Thur. 7:30am-5:00pm Alt. Fri. 7:30am-4:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Basia Ridley can be reached on (571) 272-1453. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/pw/

/Basia Ridley/
Supervisory Patent Examiner, Art Unit 4153